Nuclear Division News

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 8 No. 7/March 31, 1977

1102-77

New portable analyzer monitors environment, astronauts in space

A versatile new analytical tool, capable of simultaneously determining the composition of up to 16 different chemical and biochemical samples and printing out the results within seconds, has been developed by ORNL researchers.

The system is a portable and fully self-contained version of the "centrifugal fast analyzer," which, since its introduction in 1968, has revolutionized the speed, accuracy and sensitivity with which medical diagnostic tests and other analyses can be performed.

ORNL has now developed a compact, minicomputer-controlled prototype model of the analyzer, designed for applications ranging from field assessment of environmental pollutants to on-board clinical monitoring of astronauts in space.

Rotates at 4,000 rpm

The centrifugal fast analyzer uses a centrifuge which rotates at speeds up to 4,000 revolutions per minute. Its operation is based on rapid and precise measurements of the optical properties of multiple samples, including their transmission, fluorescence, light scattering, or luminescence.

In turn these optical measurements, carried out simultaneously at 17 different locations on the rotor, enable the composition of the material at each location to be determined by comparison with the known optical properties of a reference material.

Capabilities

The compact size (18x11x12 inches) of the system provides for a variety of applications. In addition to aiding the diagnosis of disease in mobile laboratories and at small or isolated clinics, the analyzer may even be used at the patient's bedside where results could be available within minutes after a sample is taken.

The new analyzer is capable of performing routine clinical chemistry measurements (protein, glucose, triglycerides, uric acid) and assaying numerous enzyme activities on minute quantities (down to 1 to 10 millionths of a liter) of human serum.

The system also can be used for typing and crossmatching blood; assaying environmental pollutants such as phosphate, silica and ammonia in remote locations; and investigating, in a research mode, the details of very fast chemical or biochemical reactions.

Early model

Prototype centrifugal fast analyzers were first conceived and built by ORNL scientists in 1968, and were made available commercially the following year. This development represented a major breakthrough for clinical laboratories because it increased the rate at which many tests for diagnosing diseases could be performed, as well as their precision and accuracy.

The early instruments were relatively large, the centrifuge alone requiring the space of a large table. A miniaturized fast analyzer, developed in 1973, included an automated sample-reagent loader, removable plastic rotor, rotor cleaning station, and a computer. Although the system was compact in size, the computer weighed approximately 350 pounds.

Versatile new system

The new system, weighing just 55 pounds, incorporates a microprocessor (minicomputer) to control analytical functions, acquire and process data, and print out the results. It may be operated either on alternating current or a battery pack, providing (in the latter mode) true portability. Hardcopy output is provided by an integral thermal printer.

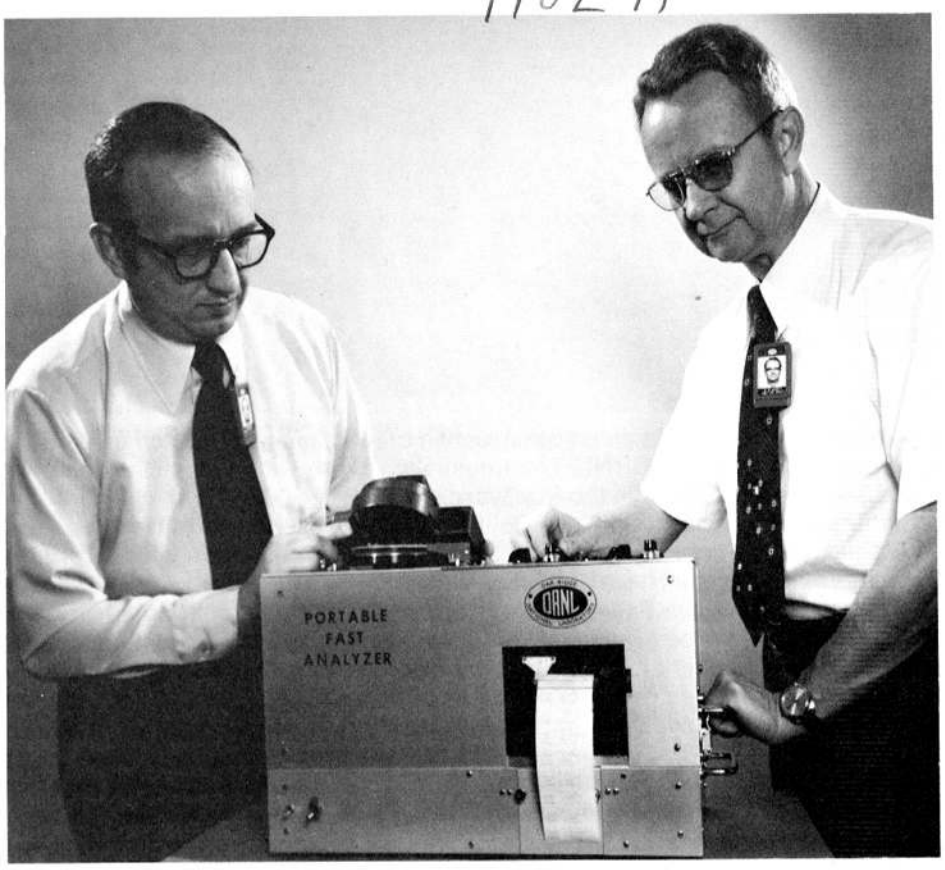
The system can perform a maximum of 99 observations, each observation consisting of one optical measurement per revolution from each of the samples. The observations are made under controlled temperature and at precisely defined time intervals.

A clutch/brake assembly in the rotor drive system enables the rotor to be accelerated to 80 percent of run speed within one-tenth of a second. The drive system, rotor speed, and clutch/brake are all controlled by the minicomputer and automatically synchronized with data acquisition.

Uses of model

The prototype model of the new analyzer will be used by Laboratory ecological researchers in assaying environmental pollutants in remote locations. It also is being considered by the National Aeronautics and Space Administration (NASA) as an onboard instrument for upcoming space shuttle flights.

The analyzer has resulted from research sponsored by ERDA, the Environmental Protection Agency, NASA and the National Institute of General Medical Sciences. Principal developers of the system are Charles D. Scott, John E. Mrochek and Richard K. Genung, ORNL's Chemical Technology Division; Wayne F. Johnson and Martin L. Bauer, ORNL's Instrumentation and Controls Division; and former ORNL employees Carl A. Burtis, National Center for Disease Control, Atlanta and Dale G. Lakomy, University of Rochester.

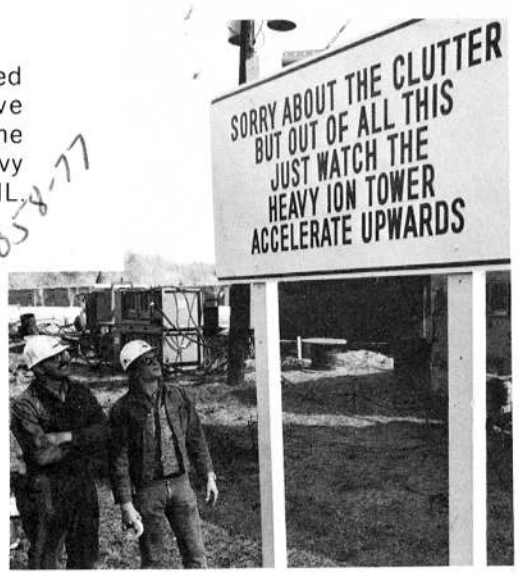


NEW ANALYZER — This portable centrifugal fast analyzer was demonstrated at the ninth annual symposium on Advanced Analytical Concepts for the Clinical Laboratory held recently at ORNL. John E. Mrochek and Charles D. Scott, two of the developers of the system, prepare it for operation.

In this issue . . .

Look familiar? If you've passed Building 6000 lately, you've probably seen this sign at the building site of the Holifield Heavy Ion Research Facility at ORNL. Story on page 2.

Other features:



10578-77

Choosing 1976 safety premiums

Christmas in April! That's the word for all Nuclear Division employees who were on the payroll as of December 31, 1976.

All four plants are issuing catalogues with safety awards ranging from $11.50 to $18.00 (and that's a conservative figure, too, because of mass buying, some of the awards are worth more than that.)

Departing from usual customs, each eligible employee is being issued a colorful catalogue with a multitude of useful and attractive gifts . . . ranging from weed cutters, hair dryers, planters, blenders, slow-cookers, etc. More than a quarter of million dollars of awards will be distributed among employees in Oak Ridge and Paducah.

Award certificates are to be returned to employees' supervisors and forwarded to each plant's safety department. They will then be forwarded to the supplier.

The North Carolina firm, which was the successful, competitive bidder on the awards, will ship the individual awards to each employee at the address indicated on his/her certificate.

Heavy Ion Tower reaches new heights

by Joe W. Gollehon

Spring-like weather has given construction crews a chance to catch up on building the Holifield Heavy Ion Research Facility at ORNL. The unusually severe winter has caused delays in construction of the tower, which is being built in the front yard of Building 6000.

Named for Rep. Chet Holifield of California, who retired in 1974 from his seat on the Joint Committee on Atomic Energy, the Heavy Ion Lab is scheduled for completion in late April, 1979. Site preparation for the $17.5 million project began in July, 1975.

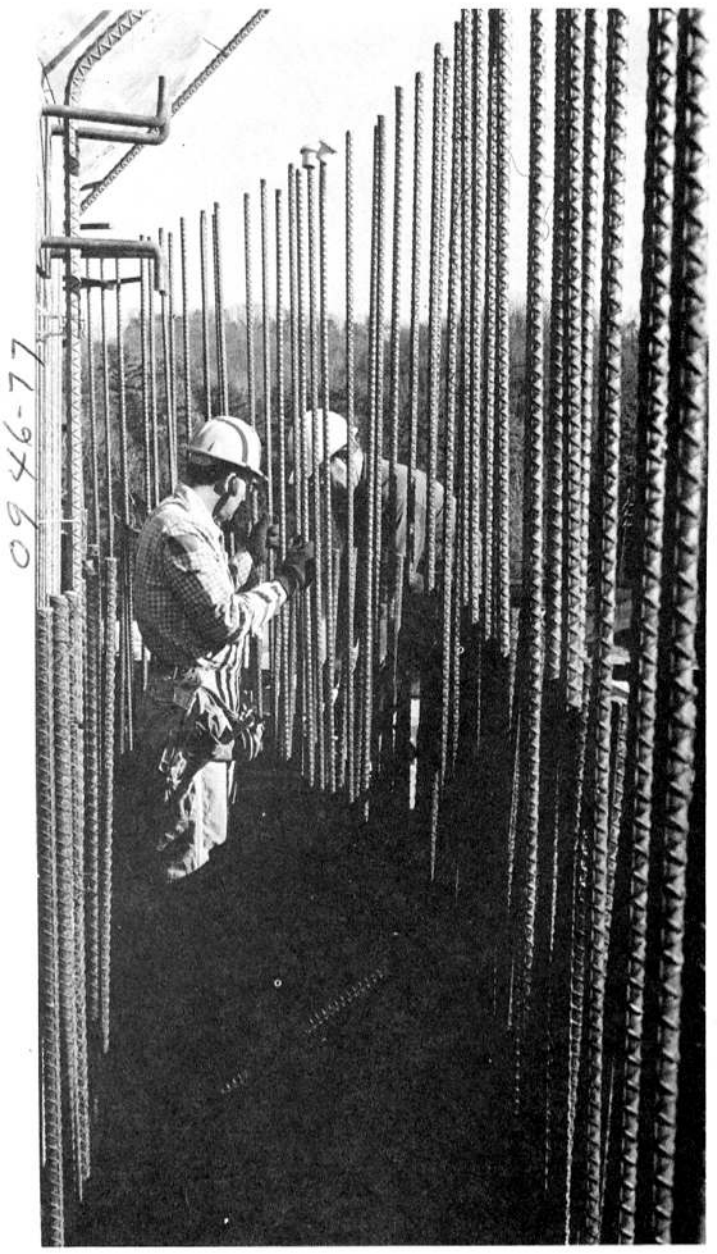
Program Director Jim Ball of the Physics Division says, the completed facility will be "twice as large as any machine of its type in the world today." The Heavy Ion Lab will have a 165-foot tower, which will house a 25 million volt tandem electrostatic accelerator. The tandem accelerator will be used alone and in conjunction with the present Oak Ridge Isochronous Cyclotron (ORIC) for increased ion energies.

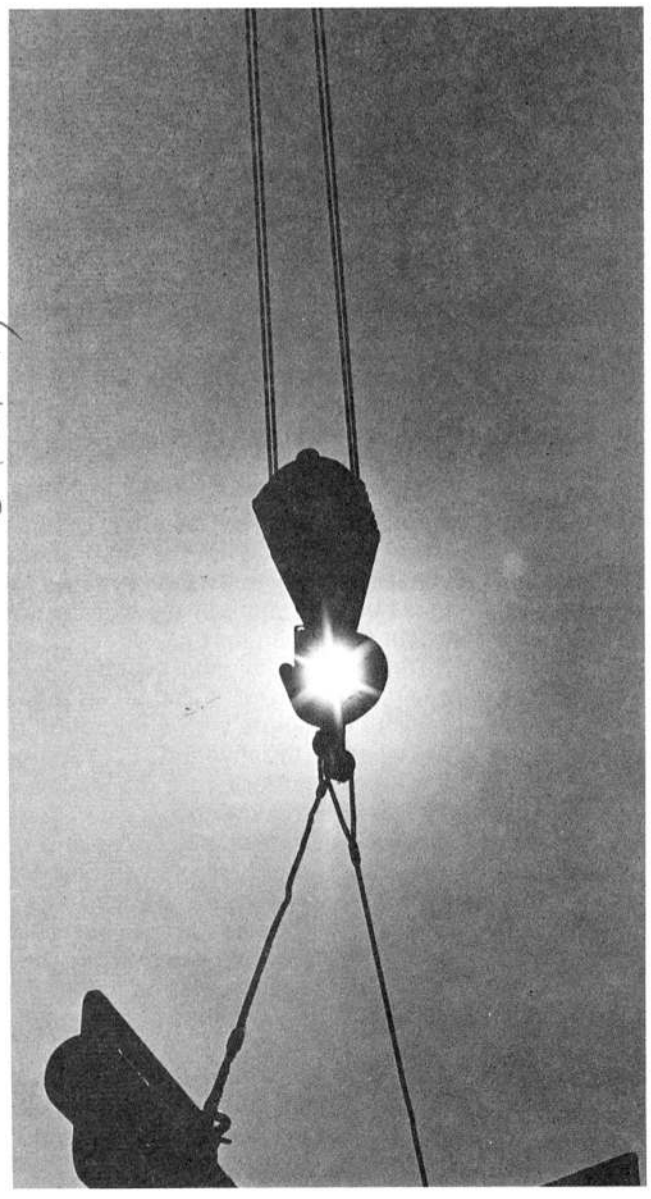
The facility will provide the nation with its most advanced tool for studying the reactions between accelerated beams of heavy, charged particles and matter. Among its applications will be studies in such fields as nuclear structure, nuclear reactions, nuclear chemistry, atomic physics, bio physics, health physics, solid state physics and material damage. A 500-member users group has been formed to plan the experimental program.

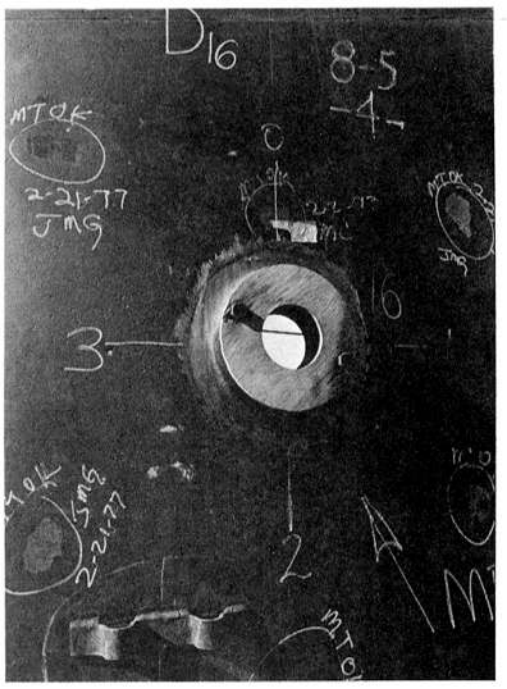
After welding and assembling, the 440-ton steel vessel will be lifted and lowered into the tower in 11 different sections.

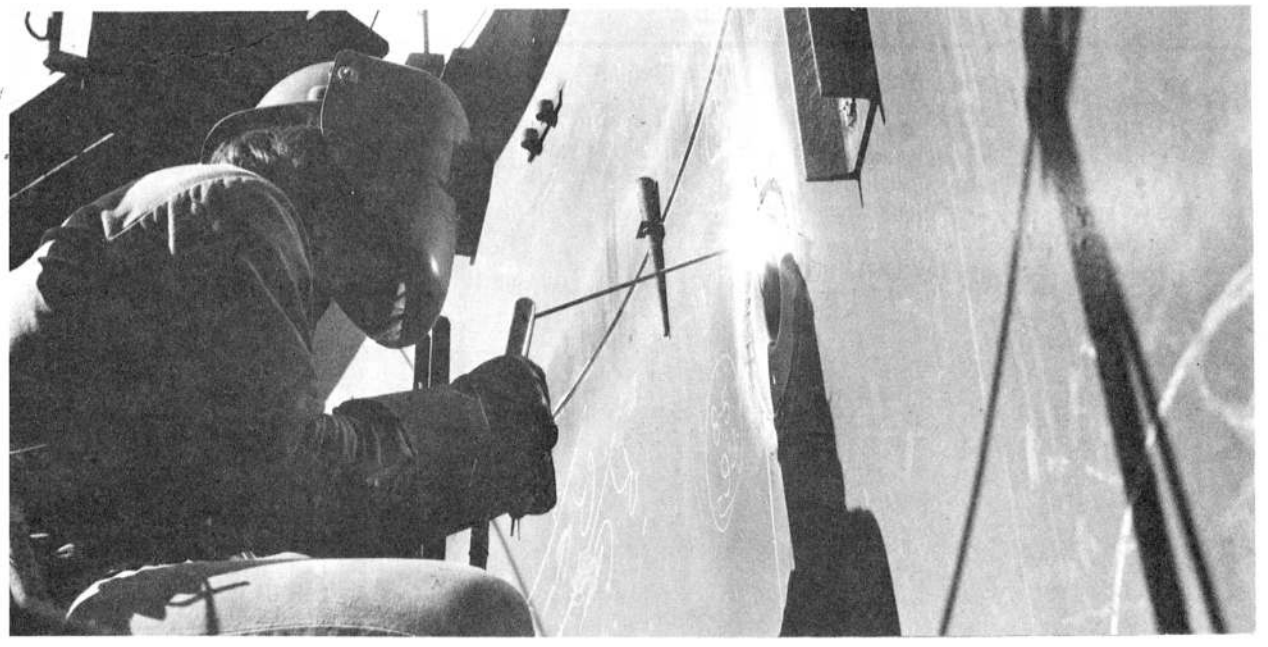
The vessel's one and one-quarter inch steel walls were manufactured by Chicago Bridge & Iron (CBI) Company at their rolling mill in Birmingham. Each evening all vessel welds are non-destructively inspected, using iridium-192 as a gamma ray source. Viewing ports in the vessel will allow observation for trouble shooting the accelerator.

Architect engineer for the project is Charles T. Main of Boston; building contractor is Tipton & Reynolds Construction Company of Alcoa; John A. Murray of the Engineering Division is the project engineer.









Photos (clockwise from top left): 1) ZEROED IN--Looking through a steel welding support that is used in assembling the end sections of the pressure vessel; 2) BEHIND BARS--Steel rods are used to reinforce the concrete; 3) ENGINEERS' "HIEROGLYPHICS"--around one of the 90 four-inch diameter viewing ports; 4) SPARKS FLY--as an iron-worker seals the edges of a viewing port; 5) SPOTLIGHT--on a crane lifting one of the 40-ton vessel sections. (Photos by Jon Q. Thompson)

question box

If you have questions on company policy, write the Editor, Nuclear Division News *(or telephone your question in, either to the editor, or to your plant contact). Space limitations may require some editing, but pertinent subject matter will not be omitted. Your name will not be used, and you will be given a personal answer if you so desire.*

Dental insurance coverage

QUESTION: I am confused about the effective date of my coverage under the Dental Expense Plan. When does a new employee's coverage become effective?

ANSWER: Eligibility begins on the **first** of each month upon completion of one year of Company Service. For example, an employee who was hired on April 1, 1976, and whose Company Service Credit was uninterrupted, would be eligible on April 1, 1977. If an employee was hired on April 2, 1976, or any other date later in that month, coverage would not begin until May 1, 1977.

Parking lot hazard

QUESTION: We are hearing a lot these days about off-the-job safety. Can Union Carbide do anything about the blind exit from the parking lot at Cheyenne Hall (on Tyrone Road)? This is a very dangerous situation and several near accidents have been noted recently.

ANSWER: A UCC-ND Safety Inspection Committee recognized this condition prior to receipt of your question and since City action was required, the matter was referred to the City Traffic Committee. City officials agreed with UCC-ND's recommendations and have designated areas east and west of the parking lot exit onto Tyrone Road as no parking zones.

Spouse counseling?

QUESTION: Is there a plan where Union Carbide spouses could attend pre-retirement counseling with company officials to learn about benefits, pensions and insurance? I know nothing about my husband's retirement benefits.

ANSWER: A representative from the Benefit Plans Office will be glad to discuss retirement benefits with you and your husband at a pre-retirement counseling session. Your husband should arrange the meeting and advise the Benefit Plans Office that you will be with him.

Simplify P.I.A. accounting

QUESTION: Is it possible to have the annual Personal Investment Account report done in simple language, spelling out how much I contributed personally, how much the company contributed, and how much interest, if any, was paid? I can't tell anything about the report I recently received.

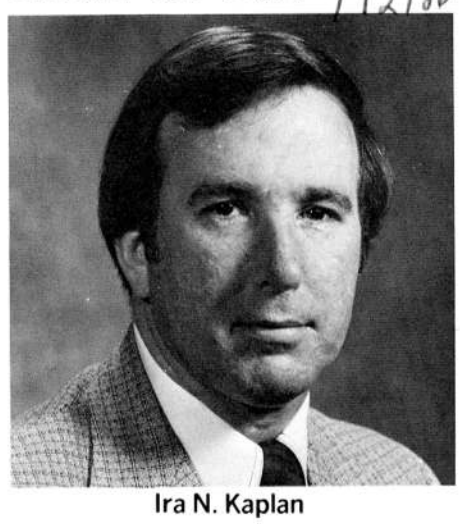
ANSWER: The Personal Investment Account form, which was mailed to all participants on or about February 10, 1977, is a little complicated because of the amount of information contained in the report. The many desirable options now available have contributed to the complexity of the form. The second line in each series of boxes is important because it shows the net transaction made to your account during the past year. Most, if not all the information you seek is contained in the report. If you will take your form to the Benefit Plans Office at your installation, they will be glad to show you how to interpret the figures.

De-Icer availability

QUESTION: The Company Store at ORNL never seems to have Union Carbide's de-icer. Is there some good reason for this?

ANSWER: Because of widespread, unusually heavy demands for Union Carbide de-icer this year, normal distribution patterns have been disrupted. The de-icer is now in stock.

Named public affairs officer for OWI



Ira N. Kaplan

Ira N. Kaplan has joined the staff of the Nuclear Division's Public Relations Department. Kaplan, formerly a senior public relations representative for Virginia Electric and Power Company (Vepco), has been assigned full time as public affairs officer for the Office of Waste Isolation (OWI).

The Office of Waste Isolation has been given the responsibility for a national study of multiple geologic locations to determine the best possible sites for storage of high-level wastes from nuclear power generating facilities.

Kaplan, a native of Baltimore, Md., received his bachelor's and master's degrees in broadcasting from the University of Alabama. He was appointed news director of WCHA radio in Chambersburg, Pa., in 1964, and the following year joined the staff of WFIR radio in Roanoke, Va. He was named news director in 1968, a position he held until he joined Vepco in 1972.

While at Vepco, he was responsible for public relations in the areas of power station engineering and construction, power supply and production operations, licensing and quality assurance, and fuel resources.

Kaplan is married to the former Vivian Sharken. They live at 908 Flanders Lane, Knoxville, with their two children, Shari and Derik.

'Radiation and You' forum at Regency

A public forum on the topic, "Radiation and You," will be held Wednesday, April 20, from 2 to 5 p.m. at the Hyatt Regency Knoxville in conjunction with the 5th International Conference on Reactor Shielding.

The ORNL-sponsored international conference, with an expected attendance of 300 specialists in nuclear-reactor design and radiation protection from more than 30 countries, will be in session April 18-22 in Knoxville.

Students, teachers and interested citizens from East Tennessee and the surrounding area have been invited to participate in the special public "mini-conference." The program will feature popular-level presentations by four Oak Ridge scientists, and a question-and-answer discussion led by a panel of area high school and college students.

Its purpose is to help laymen gain a broader perspective and understanding of both natural and man-made sources of radiation in the human environment and of alternatives for the safe management of radioactive wastes.

The public forum is being presented jointly by the East Tennessee Chapter of the Health Physics Society and the Oak Ridge Section of the American Nuclear Society.

Speakers will be:

- John A. Auxier, director, Health Physics Division, ORNL, "Radiation: What Is It, and How Do We Protect People?"
- Clarence C. Lushbaugh, M.D., chairman, Medical and Health Sciences Division, Oak Ridge Associated Universities; "Radiation: What Are the Effects on Humans?"
- Sam E. Beall, leader of planning, Energy Division, ORNL, "Emissions from Electric Power Plants: How Do They Compare with Hazards from Other Energy Sources?" and
- Arvin S. Quist, manager of regulatory affairs, Office of Waste Isolation, "Nuclear Wastes: How Do We Manage Them?"

Stanley I. Auerbach, director of the ORNL Environmental Sciences Division, will serve as chairman of the program, which has been organized on behalf of the sponsoring societies by James E. Turner of the ORNL Health Physics Division; and David K. Trubey of the Laboratory's Radiation Shielding Information Center. Trubey is also general chairman for the international conference.

Attendance at the public forum is open to all interested persons. No ticket or registration is required.

retirements

Owen C. Beatty
Y-12 Guard Department
31 years service

Philip J. Breman
ORGDP Engineering
26 years service

L. Elkin Burkhart
Y-12 Development
33 years service

Charles R. Harris
Y-12 Materials Control
25 years service

Robert G. Hill
Y-12 Research Services
23 years service

Clarence Hood
Plant and Equipment
ORNL
24 years service

Orion C. Lee
Y-12 Maintenance
31 years service

Charles L. Segaser
Energy Division, ORNL
30 years service

Samuel V. Shepherd
Y-12 Graphite Shop
23 years service

Sammie E. West
Y-12 Metal Preparation
33 years service

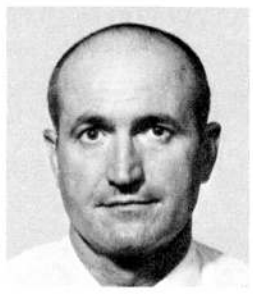
safety scoreboard

Time worked without a lost-time accident through March 24:

Paducah	36 Days	283,200 Man-Hours
ORGDP	80 Days	2,558,535 Man-Hours
Y-12 Plant	37 Days	1,000,052 Man-Hours
ORNL	189 Days	3,838,515 Man-Hours

'A Different Drummer'

South Florida duck-hunting has nightmarish end results



Hugo Bertini, ORNL's Neutron Physics Division, writes his second "different drummer" article. Although marksmanship is his first love, hunting has become a "spin-off" hobby. He and his wife, Joanne, also an ORNL employee, live at 915 West Outer Drive, Oak Ridge.

A 24-year veteran at Union Carbide, he has a master's degree from Northwestern and a Ph.D. in physics from the University of Tennessee.

by Hugo Bertini

Years ago, before Disneyworld and the onset of the big land developers, central Florida was a fairly desolate place. My in-laws had settled there in a remote area to grow oranges, and we used to spend our Christmas vacations with them (a cheap way to vacation with room and board paid). I hunted along the trails in the forests (subtropical jungles, really) searching for ducks that may have settled on isolated ponds, but my luck wasn't too great.

After my having made many unsuccessful forays, my in-laws suggested that I visit a local friend and avid hunter for advice. I did, and he took me off into the wilderness to some property he owned, which he called a "savanna." It was a flat area about a half-a-mile square, and it had only one problem: it was all under water, the water being supplied by the St. Johns River nearby.

He told me that the water depth varied from about 6 inches to 10 feet. "You need waders," he said, "but I guarantee you there are ducks back in there."

"Along with what else?" I thought.

Because I didn't have any waders, I saw a legitimate excuse to get out of the situation. I wasn't particularly anxious to hunt in the swamp, for this Yankee city-boy likes solid ground under his feet. So, the fellow loaned me a pair. Terrific! The waders were made of very thin rubber, even around the feet, and I didn't realize then that they were meant to be worn with boots or gym shoes.

Early the next morning, I drove back to the "savanna." Equipped now with a shotgun, waders, shells, a life jacket (in case I stepped into a 10-foot hole), and an old 45 caliber revolver (this, along with everything else, would keep me anchored to the bottom of the hole in spite of the life jacket), I ventured forth. The shotgun was for ducks and unfriendly snakes, the 45 for other creatures that might be in the swamp.

"There was an early morning fog that wasn't there the day before."

There was a thick early morning fog over the area that wasn't there the day before. I couldn't see anything beyond 20 feet. Brittle bushes protruded from the water everywhere. My first step into the swamp revealed another disquieting feature. The water was only a foot deep but I sank at least another half-a-foot into the muck below, and continued sinking slowly.

"This has got to be some kind of gag," I said to myself as I took another step.

I could feel every underwater twig with my feet through the thin rubber waders. The water was murky and I couldn't see the bottom. A short distance from shore I stepped on something solid under the water.

"Don't move, please don't move," I pleaded with the solid object.

It didn't. It was a submerged log.

"Jerk," I said to myself, and continued on. It was difficult to keep my balance in the water because of the black mud below that constantly changed in depth.

"Except for the sloshing noise I was making, it was quiet as death."

In the swamp my visibility was further impaired by the protruding bushes. They were so thick I could only see the water immediately around me. I walked slowly into the fog, and the water level varied from knee-deep to waist-deep. Except for the sloshing noise I was making, it was quiet as death.

After an eternity of stumbling and wading, and nearing what I thought was the far edge of the swamp, I was scared witless by the sudden quacking and flapping of a flock of ducks that came up in front of me. They came out of the fog right over me. I shot a few times (about 10) and got one, and they circled and came right back over, and I got another one. That was it for the day—I thought.

I collected the ducks, and, by this time sweating profusely and balancing shotgun, ducks, and what have you in my arms, I turned back. Tired, plodding more slowly through the water, I proceeded about half-way back. Then a close-by sudden explosion of sound that started with a hiss and ended with a growl sent electric shock waves of searing fear through every muscle of my body. I stepped sideways, dropped the ducks, and leveled my shotgun in the direction of the sound. I couldn't see anything, but whatever it was, it had to be big to make that much noise.

"A sudden explosion of sound that started with a hiss like escaping steam and ended with a growl."

I waited, mouth dry, breathing in gasps. Nothing. I reached out with the shotgun to float the ducks toward me. I picked them up and was struck by another tremendous hissing-growling blast that was so close I thought I could feel the heat of its breath, and yet I couldn't see it. It had to be an alligator that was hidden in the bushes.

Controlled now only by near-paralyzing fear, I began retreating, walking backwards, facing the location of the sound, and looking for the trace of a snout and eyes above the surface of the water. (At times it helps to be ignorant, because alligators attack underwater — not on the surface.) After a few backward steps, I tripped on a submerged log and went down to my shoulders in water. I staggered around trying feverishly to regain my balance, and, in the meantime, wetting everything — including the 45 I had completely forgotten about. Finally on balance I paused to look and listen and as usual began to sink slowly into the mud. Complete silence. I began to move sideways so I could look both forward and backward, and after a while faced forward completely and tried, by speeding, to become the second man in history to walk on water. I didn't achieve that — not quite anyway.

Finally, I reached the shore and sat on the blessed dry sand for a few minutes to settle down a little. After a while I got up and began walking along the shore to the swamp back to the car; meanwhile, reviewing my reactions during the little set-to out in the swamp. I was completely disgusted with my behavior because something I hadn't even seen had caused me to totally come apart at the seams. It was conduct unbecoming a Yankee. While trudging along the shore in this foul mood a small water moccasin slithered across my path on its way to the water. It stopped right in front of me, raised its head, opened its little mouth revealing its pure white interior, and hissed a challenge. I booted it into the swamp!

"Pick on someone your own size, you dummy," I muttered as I moved on.

"I never returned to that swamp to hunt for a variety of reasons!"

I never returned to hunt in that swamp for a variety of complicated, ethno-environmental, socio-psychedelic, subconscious, psychological reasons. When I returned to ORNL, I asked Jimmy Bell of the Chemistry Division, who was born and raised in southern Georgia, what in the world that swamp creature could have been.

"It was probably just an old 'gator trying to scare you off," he laughed.

I assured him that the 'gator had succeeded magnificently. Although they are still rather rare in Florida (not so in Louisiana any more) the casualness that southern folks treat these creatures with is amazing. Down there I have seen local men come up to the edge of a swamp and, without the slightest pause, wade right in up to their waist as though they were on a Sunday stroll.

Johnny Rebs, this Yankee's hat is off to you!

wanted

Y-12 PLANT

TWO VAN POOL riders from Maryville to Central, North or East Portal, straight day. G. D. Coppenger, plant phone 3-5963, home phone Maryville 983-5939.

RIDE from Norway Lane, Oliver Springs, to West Portal, H Shift. Wilma Holt, plant phone 3-5643, home phone Oliver Springs 435-6720.

CAR POOL from Robertsville, Louisiana Area, Oak Ridge, to North Portal, straight day. Don Shaner, plant phone 3-3818, home phone Oak Ridge 483-6280.

ORNL

CAR POOL MEMBERS from Bearden area in Knoxville, prefer 8-4:30 shift. Beverly Barber, plant phone 3-1291, home phone 584-5246.

RIDE from Forest Park Boulevard, Bearden area, to West Portal. Alice Montgomery, plant phone 3-1257.

CAR POOL MEMBERS from areas of West Outer, Waddell, Pennsylvania or Hillside, Oak Ridge, to East Portal, 8:15 to 4:30. Tom Burnett, plant phone 3-6939, home phone 483-1975.

ORGDP

FOUR VAN POOL riders from Cumberland Estates, Knoxville, to any portal, straight day. Steve Shipley, plant phone 3-3661, home phone Knoxville 588-8660.

CAR POOL member from East Knoxville to any portal, straight day. Dora Clark, plant phone 3-3814, or Clarence Tate, Knoxville 546-8022.

Science Digest publishes ORNL **Review** excerpts

"Birth of the Atomic Reactor," a Bicentennial **ORNL Review** article, was excerpted by **Science Digest** in its February issue. Highlighted in this article is "A Visit from St. Nucleus," by Henry W. Newsom, once an experimental physicist with the Manhattan Project and now at Duke University officiating over the Triangle Universities Nuclear Laboratory.

"In observation of the Bicentennial, the Fall '76 **Review** contains a skeleton history of the Laboratory's first 25 years, interspersed with reminiscences, anecdotes, funny pictures, and a few expansions on particular aspects of importance to the Laboratory," reads Barbara Lyon's Editor's Note.

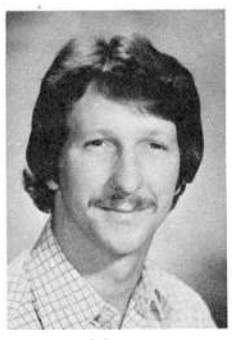
Interested persons can obtain a copy of this special Bicentennial edition by calling the **ORNL Review** Office at 3-6900.

Promotions told at Paducah

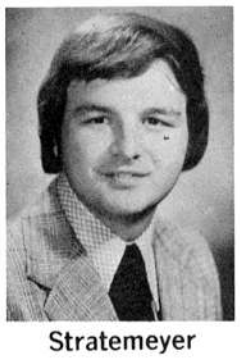

Compton


Hays


Hoskins


Mayo


Mittendorf


Stratemeyer


Summers

Eight promotions have been announced at the Paducah Plant. James M. Compton has been named an inspector; Clarence O. Hays, a power operations supervisor; Floy E. Hoskins, a senior inspector; William T. Mayo, a senior inspector; Edwin D. Mittendorf, an operations foreman; Kelly D. Stratemeyer, an operations foreman; Robert A. Summers, an engineer; and Ronald A. Haugen, an engineer.

Compton, a veteran of the U.S. Air Force, has been with Union Carbide 25 years. A native of Trigg County, he and his wife live at Route 4, Kevil. They have four married children.

Hays was employed by Sperry Rail Service before joining Union Carbide 25 years ago. He and his wife, Edna Ruth, live in Paducah.

Hoskins, also an Air Force veteran, has been with Union Carbide 24 years. He and his wife, Margarette, live on Austin Avenue, Paducah. They have three children, Deborah, David and Deena.

Mayo, a native of Jackson, Tenn., worked with the Paducah Bank and U.S. Life Credit before joining Union Carbide. He and his wife, Pamela, live at Route 5, Paducah.

Mittendorf holds a B.S. in agriculture from Murray State University and previously worked with the USDA Soil Conservation Service. He and his wife, Frances, live at Route 3, Metropolis, Ill. They have two children, Julie and Carla.

Stratemeyer has been with Union Carbide three years. Prior to that, he worked with the Metropolis IGA. He lives on Ferry Street, Paducah, with his wife, Eva, and son, Juston.

Summers joined Union Carbide last year after teaching at Murray State University. He has a B.S. in industrial Education and an M.S. in industrial technology, both from Murray State. He lives at Route 4, Cunningham, with his wife, Brenda. They have two children, Laura and Emily.

Haugen, a native of Milwaukee, joined Union Carbide last year. He has a B.S. degree from the University of Kentucky and has worked with IBM, Wisconsin Electric and Control Data Corporation. He and his family live in Mayfield.

Savings Plan-Personal Investment Account

Recent Unit Values:

	Fixed Income Fund	UCC Stock	Equity Investment Fund
August 73	10.0000	34.7688	10.0000
December 73	10.2444	31.8170	9.3602
December 74	11.0438	40.3009	6.4354
December 75	11.9880	58.7886	7.8231
December 76	13.0554	59.2723	8.8167
January 77	13.1474	58.7847	8.1945
February 77	13.2400	58.8646	8.0541

Note: Fixed Income Fund unit values reflect interest additions to achieve the guaranteed effective annual interest rate of 8.70% for 1977. Union Carbide stock values are the average cost of stock purchases during the month plus brokerage charges. Equity Investment Fund unit values represent the month-end market value of securities held by the Fund. Dividing the total value by the number of units in the fund establishes the month's unit values—and the price at which new units are added that month.

Six new lieutenants in Y-12

Six men have been named fire and guard lieutenants in the Y-12 Plant. They are Earl A. Brown Jr., Lloyd O. Campbell, Onva L. Duncan, Stanley E. Justice Jr., William S. Trotter and John H. Walton.

Brown, a native of Rockwood, served 20 years in the U.S. Navy before joining Union Carbide last year. He attended Tennessee A & I State University and is currently attending Roane State Community College.

Married to the former Cecilia G. Tulloss, he lives at 10757 Mercury Drive, Concord.


Brown


Campbell

Campbell, who was born in Harriman, has been with Union Carbide 27 years.

He and his wife, the former Virginia Cagle, live at 708 Georgia Street, Harriman. They have a daughter, Deborah.


Duncan


Justice

Duncan, a native of Lake City, attended the University of Tennessee and the University of Maryland. He worked with the Lake City Water Department and the fire and police department there before joining Union Carbide in 1975.

He is married to the former Brenda Massengill. They live with their daughter, Ruth, at Route 2, Lake City.

Justice, a native of Oliver Springs, has been with Union Carbide more than two years.

He and his wife, the former Faye Taylor, live at Route 1, Cove Road, Oliver Springs, with their daughter, Sonia.


Trotter


Walton

Trotter, who was born in Knoxville, has a B.S. in education from U.T. He came with Union Carbide last year after working at McGhee-Tyson Airport in Knoxville.

Mrs. Trotter is the former Janice Thorpe, and the couple lives at 5912 Tallen Road, Knoxville.

Walton, a native of Knoxville, studied fire science technology at Roane State Community College. He has been with Union Carbide 10 years, and is a veteran of the U.S. Army.

He lives at 3229 Ashland Avenue, Knoxville, and has a daughter, Dana.

anniversaries

ORGDP

30 YEARS

Carl W. Warwick, Grounds Maintenance Department; and Francis M. Tench Jr., Separations Systems Division.

25 YEARS

Donald R. Gardiner, Donald D. Johnson, Elsie L. McKeethan, Harvey W. Bullock, Gary L. Pickel, Robert C. Osborne, Melvin D. Fox and Charles K. Steele.

Y-12 PLANT

25 YEARS

James K. McCollum, Dennis E. Stone, James C. Duff, Kenneth R. Bowers and James K. Cox.

20 YEARS

William H. Woods, Ernest H. Prosise Jr., Clarence H. Neal and Howard A. Hutcheson.

PADUCAH

25 YEARS

John B. Naive, William H. York, Hugh A. Vantreese, Wayne M. Coster, Robert R. Mick, William H. Allbritton, Solon T. Williams, John W. Bridges, James M. Compson, James O. Keeling, Bobby Smith, Lawrence S. Franklin, William E. Shelton, Robert F. Mohler, William R. Hines, Herman L. Conner, James H. Webb, Harold V. Carr and Gilbert F. Killibrew.

Other golf leagues . . .

The summer golf leagues are beginning to organize for 1977. The Dead Horse Lake League plays on Tuesdays; the South West Point League on Mondays. The deadline for signing up is April 14. A member of each team should contact Recreation, extension 3-5833, before April 14.

next issue . . .

The next issue will be dated April 14. The deadline is April 5.

Nuclear Division News

UNION CARBIDE CORPORATION
NUCLEAR DIVISION
Office
Post Office Box Y
Oak Ridge, Tenn. 37830

UNION CARBIDE

Member, INTERNATIONAL ASSOCIATION OF BUSINESS COMMUNICATORS

EDITOR
James A. Young, Ext. 3-7100

ASSOCIATE EDITOR
Karen L. Cromer Ext. 3-6266

ORGDP
Doug Carter, Ext. 3-3434

PADUCAH
Keith Bryant, Bell 369

5085-1

recreationotes

HANDICAP WINNERS FOR MEN — Topping all other men's teams in the Carbide Bowling Tournament was the Mini-Strikes. They are, front row from left, John Patton, Harold Zang and Ray Smith. In the back row are Norm Shamblin and Dave Lanham.

Y-12 bowling . . .

The Playboys still hold a one-point lead in the Classic League as Sam Campbell marked well recently to post a 613/700 series. He replaced Dave Foster's 610/700 highs.

The Mini-Strikes pulled off a four point lead in the C League. Gearld Doyles' single of 267 and Bob Carmack's series of 711 still stands atop individual rolling.

The Hits & Misses hold a three-point lead in the Y-12 Mixed League, as the end draws nigh. Alice Forseman showed bowlers how to pick up the 7, 6-10 split.

Carbide bowling . . .

The Quetzecuatles hold a one-point lead in the All-Carbide Family Mixed League, over the Odd Balls and Hy-Wickis. Al Gladson and Patty Reece rolled series of 527 and 506 recently.

ORNL bowling . . .

The Ten Pins hold a really good lead in the A League, as the Zots' Davy rolled a 678 series in mid-March.

The Beryls still stand high in the C League, as Ray Smith's 702 series hit the boards recently.

The Bowling Aces hold a four-pointer in the ORNL Ladies League, over the Mousechasers. March highs saw Clyde Montgomery roll a 526/610 series.

Volleyball Leagues . . .

Final standings are seen below for the 1977 Volleyball Leagues, as the Radd-Fizz, Taxi Squad and Gauss House Gang teams come out victors in their respective leagues.

Final standings follow:

NUCLEAR LEAGUE

Team	Won	Lost
Radd-Fizz	51	12
The Skinks	48	15
Over-The-Hill-Gang	48	15
Blue Team	45	15
Pogo's	40	20
Artie's Army	30	33
Maxwell Demons	29	34
Ball Busters	26	37
C-Shift Reds	15	45
The Kilos	15	45
The Abends	15	48
Fed's	10	53

ATOMIC LEAGUE

Taxi Squad	49	11
Diggers No. 2	47	13
Diggers No. 1	41	19
Quarks	23	37
Ecomen	14	46
Old Men	6	54

CARBON LEAGUE

Gauss House Gang	40	8
Volares	30	15
Group	23	22
Half A Chance	14	31
Killer Bees	7	38

In tournament competition last week, the Blue Team took the top place in the Nuclear League; the Diggers No.2 team won laurels in the Atomic League; and the Gauss House Gang took the Carbon League. Named for the sportsmanship awards were the Half-a-Chance, Maxwell Demons and Ecomen teams.

CARBIDE NO. 1 TEAM — Members of Paducah's Carbide Number One team racked up 10 big wins to 7 minor losses. Perhaps the record is unimpressive, but the players and the PGDP can take pride in a positive attitude. Coach Martin is already revving up for a better season next year. Pictured in front is ball boy Matt Martin. Kneeling in the front row, from left, are Byron Foust, Dave Martin, Randy Harris, Mike Flood, Ken Hollowell and Elton Priddy. In the back row are Dave Hackney, Stan Jones, Bill Pruitt, Troy Simmons, Tony Morphew and Mike Anderson. Not present was Jim Robertson.

Softball leagues . . .

There will be three Nuclear Division softball leagues in the Oak Ridge area for summer fun. The Atomic League is the competitive one; the Nuclear League, for 35-year-olders and up; and the Carbon League, a mixed one with both men and women involved.

You may obtain entry forms from the Recreation Department to enter a team, or you may give them your name if you want on a team. The extension is 3-5833.

Deadline for entry is April 15.

ORGDP bowling . . .

The Payoffs pad their lead in the ORGDP Women's League, thus assuming a 15 point lead over the Uptowners. Wow! Oleta Carden rolled a 267/285 game recently . . . and a 601 handicap series. Elieen Walbrecht put a 637 series up.

The Hi-Rollers are high in the Wednesday League. Jim Fletcher rolled a 269 scratch, 654 series recently. The Rollers are four up on the Planners.

In Tuesday League it's still the Mishaps, over the All Steers. S. R. Smith rolled a 231 single and J. H. Peer rolled a 616 series.

Summer golf league . . .

The 1977 summer Y-12 Golf League, held on Thursdays at South Hills Golf Course, is getting underway. Each team will consist of two players and one alternate. Interested parties should contact the Recreation Office, extension 3-5833, or George Cozart, 3-5081.

Presidential award . . .

Perry S. Gouge, ORNL, has received the Presidential Sports Award in jogging.

Golf clinic . . .

The Recreation Department is sponsoring a golf clinic for Union Carbide employees April 18, 19, 20 and 21 at the Oak Ridge Driving Range.

The clinic will be directed toward beginners and/or high handicap golfers. A local golf pro will be on hand to conduct the clinic. Deadline for entering is April 15, so act now.

Just fill out the coupon below and forward it to the Recreation Department, Building 9711-5, MS-1, Y-12.

Spring cleanup schedule at ORGDP

Spring cleanup activities begin this week at ORGDP. Frank Strang, superintendent of the Barrier Manufacturing Division, will coordinate the activities. During the campaign, which uses the slogan — PRIDE IN K-25 — special emphasis will be put on each individual's contribution and the close relationship between good housekeeping and the achievement of safety and quality.

Assessment of the preliminary status of each division in the plant will be carried out by teams during the initial inspections before April 15. A follow-up report of progress will be made the next week, and the findings of the final inspection will be reported on April 29. During early May the plant manager's walk-through tour will take place.

The annual campaign will supplement the on-going housekeeping efforts of the plant and will encourage employees to raise the housekeeping and safety standards for their work areas. This year, as in the past, the positive benefits of the cleanup campaign will depend on the full participation of every employee in the plant.

GOLF CLINIC

Name _____

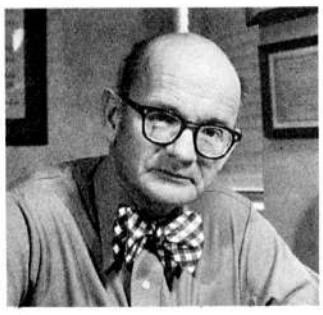
Plant _____ **Indicate 1st and 2nd choice**

Phone _____ **6 p.m.** _____ **7 p.m.** _____

Building _____ **6:30 p.m.** _____ **7:30 p.m.**

Complete and return to Recreation, Bldg. 9711-5, MS 1, Y-12

Further information may be obtained from the Recreation Department, extension 3-5833.



medicine chest

by T. A. Lincoln, M.D.

(Editor's Note: Dr. Lincoln alternates his regular column with "The Medicine Chest," where he answers questions from employees concerning health in general. Questions are handled in strict confidence, as they are handled in our Question Box. Just address your question to "Medicine Chest," NUCLEAR DIVISION NEWS, Building 9704-2, Stop 20, Y-12, or call the news editor in your plant, and give him or her your question on the telephone.)

QUESTION: "What causes some persons to experience severe pain in the ears when descending from high altitudes (e.g., landing in a plane or driving down from the mountains)? Is there anything that will relieve this? Someone recommended chewing gum, but it didn't help."

ANSWER: The pain you experienced is caused by the effect of a difference in air pressure between the outside air and air which has become trapped in your middle ear. A small tube, called the Eustachian tube, which opens into the throat is the ear's pressure relief valve, and it has not worked properly.

When the tube remains open, you normally feel nothing or maybe a mild sensation of popping as the pressure equalizes. When you take off in an airplane which is not pressurized, or when you rapidly drive up a mountain, the barometric pressure outside your middle ear declines as you ascend. The result — air inside the ear is at much higher pressure than on the outside. This pressure differential is normally equalized by air flowing out of the middle ear through the Eustachian tube into the throat. When you rapidly descend in altitude, the opposite occurs.

When ascending, the air in the middle ear usually pops out into the throat without much difficulty. When descending, the opening of the Eustachian tube in the throat often acts like a flutter valve and prevents air from entering the middle ear. This flutter valve action also helps protect the middle ear from damage which might take place during sneezing, coughing or blowing up a balloon.

May hemorrhage

The pressure differential which occurs either during ascent or descent causes the ear drum to either bulge or retract, causing pain. If the pressure in the middle ear remains reduced, frothy serous and sometimes even bloody fluid is drawn from the mucous membrane, almost filling the middle ear. The ability to hear is markedly impaired. The ear drum sometimes bulges so much or is so severely retracted that it develops multiple small areas of hemorrhage. When such injury happens, the condition is known as aero-otitis media. It frequently is followed by a complicating bacterial infection, so antibiotics are usually used to treat it.

Swallowing or yawning is the best way to open the Eustachian tube. Sometimes moving the jaw from side to side while yawning also helps.

Individuals who have an upper respiratory infection or allergy are much more vulnerable to aero-otitis. They have a swollen mucous membrane, and blockage for the Eustachian tube is more likely to occur. They may be able to prevent difficulty by taking a nasal decongestant-antihistamine pill about an hour before flight time. Nose drops also are helpful but they, too, need to be used before takeoff or before descent.

QUESTION: "I read your article on fitness in the last issue of the **News**, and I want to know how to prevent even those rare after-jogging heart attacks."

ANSWER: Prohibiting jogging is not the answer. Heart attacks occur during or after sleeping, eating, talking and sexual intercourse, and nobody suggests prohibiting these activities. A regular jogging program benefits all who can participate, and the net overall effect is to reduce the likelihood of heart attack, delay its ultimate appearance or reduce its severity if and when it occurs. The following items are suggestions to try to prevent this disaster.

Safe jogging tips

1. After age 40, don't run any competitive races until you are conditioned enough to finish a marathon! Jog for pleasure or for improving endurance. Don't participate in competitive races where sprinting may be necessary. Don't ever push yourself too hard. Most heart attacks occur in occasional joggers who have overestimated their level of conditioning.

2. Once a year, have a treadmill test under the supervision of a cardiologist. You should be stressed to your maximum heart rate in order to detect any rhythm disturbances or evidence of impaired circulation to an area of your heart muscle. Unfortunately, such testing is expensive, not readily available and not foolproof. False test results can occur — both positive and negative.

3. Warm up before jogging, and cool down afterwards by walking a lap or two.

4. Avoid a lot of coffee or cola beverages before jogging. Caffeine makes the heart more vulnerable to rhythm disturbances.

5. Don't run immediately after a big meal.

6. Nicotine sensitizes heart muscle to rhythm disturbances. A few smokers mistakenly think they can counteract the effect of nicotine by jogging. Quit smoking before you start your jogging program!

7. Jog frequently and at a distance which provides some mild conditioning effect. Dr. Tom Bassler, editor of the American Medical Joggers Association **Newsletter**, says there have been no fatal heart attacks in joggers who run six miles a day. That's unrealistic for most people, but jogging should occur at least three times a week and preferably four or five times and should be at least three miles each time. Naturally, the buildup to that level should be gradual.

8. Pay heed to the following important warning signs, and investigate them before continuing jogging: dizziness or faintness after running, excessive breathlessness, slow heart rate return to normal, any irregularity of heart beat during or after jogging, excessive fatigue, nausea, chest pain or pale or clammy skin during or after exercise.

5118-1

NOVEL COLLECTIBLES — Al E. Ethridge, a security guard at the Paducah Plant, shows reporter Darlene McPherson an historic can of beer and other novel collectibles in the lost and found repository. Each item turned in is coded and labeled when it arrives in the Guard Department. Many of the articles have been in a so-called "holding pattern" since the plant's opening, more than 25 years ago.

Historic beer can mystifies Paducah's lost and found man

by Darlene McPherson

Something akin to a pack rat's paradise is only one interesting aspect of Al E. Ethridge's responsibility as a guard at PGDP. Ethridge has been in this job at the plant for 25 years and because of that fact, is virtually a walking history book.

He recalls coming into the Union Carbide operation with one of the first guard instruction classes in the early 50's about the same time the lost and found department acquired one of its vintaged relics — a Griesedieck beer can — unopened.

Nobody claims it

The can appeared when it rolled out of a container of crushed ice and has remained in the guard department's possession under Ethridge's supervision for over 20 years unequivocally unclaimed. Speculators say the contents are probably still palatable, however, the can itself is now much more desirable than the beverage inside since the company no longer manufactures this particular brand.

Yet the aging beer can is not alone in the category of odd items in this collection. Just a few other members of this unusual assortment include a genuine corn cob pipe accompanied by several pouches of "well cured" tobacco, 4 one dollar bills, a gold stick pin recovered at a 1957 dance, a wool sweater, a Westclox pocket watch, one fully outfitted lunch box — minus the sandwich — and numerous pairs of glasses and keys.

But more important than his supply duties, are Ethridge's guard responsibilities which he takes very seriously. Following an extensive instruction and target practice program, Ethridge began his patroling activities as do all other guards. In his opinion, it is one of the most interesting jobs offered. He has the advantage of covering the entire plant as well as meeting a great majority of the employees.

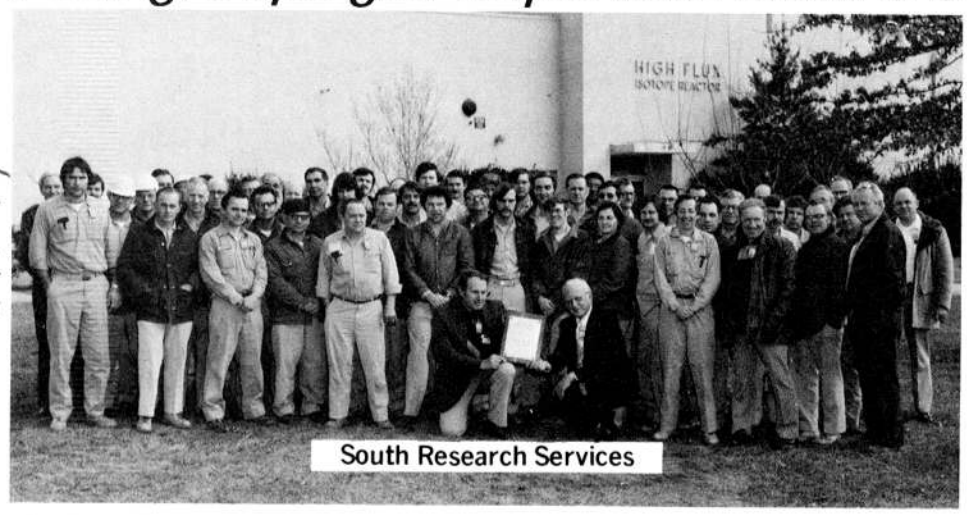
And aside from these aspects, he has acquired a tremendous memory capacity. At a time when the plant employed around 1,000 persons, Ethridge could name every face and corresponding badge number. He feels every guard probably forms a talent such as this to a certain degree. But his particular acuteness at this effort is reinforced by an incident when he recognized a plant visitor a year after his initial visit.

Pride in his job and performance is inherent in Ethridge's attitude. The fact that, at one point, he had recorded 17½ years of perfect attendance without an absence lends credibility to that reality. Ethridge also happily admits that he has never had to use his .38 with the exception of shooting a fox suspected of being rabid.

Looking back, Ethridge is quite content with his past career. He looks forward now to retirement and plenty of time for coon hunting.

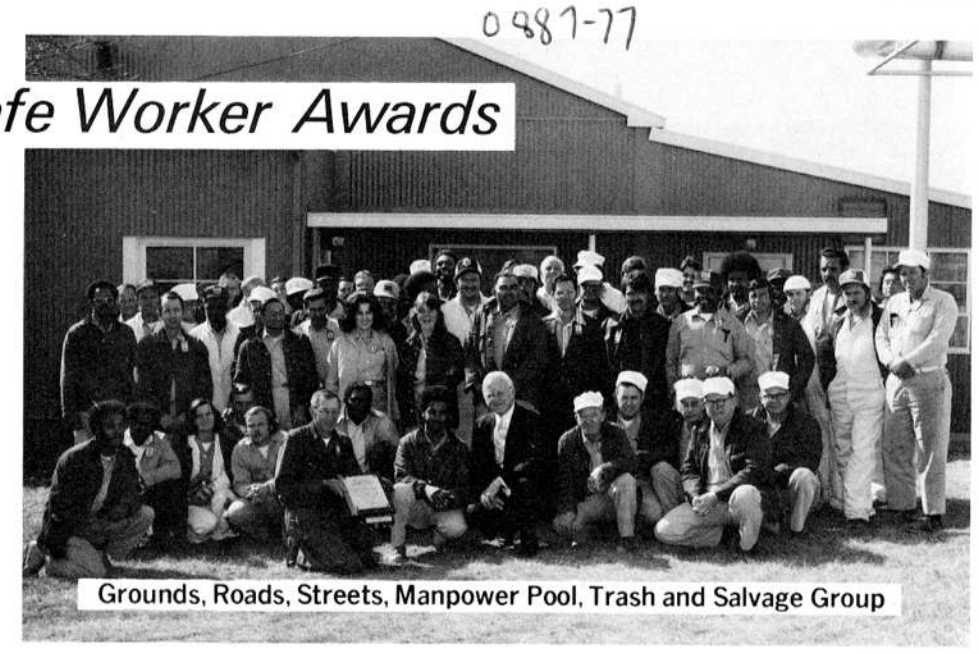
Second time around . . .

Four groups get Superintendent's Safe Worker Awards



0891-77

South Research Services


0887-77

Grounds, Roads, Streets, Manpower Pool, Trash and Salvage Group

Four Plant and equipment groups at ORNL have been awarded the 1976 Superintendent's Safe Worker Award (SSWA). To be eligible for this award, a group must work the entire calendar year without being charged with a serious injury.

One group, South Research Services, received the "excellent" SSWA classification (one serious injury charged). The remaining three received "good" ratings (two serious injuries charged).

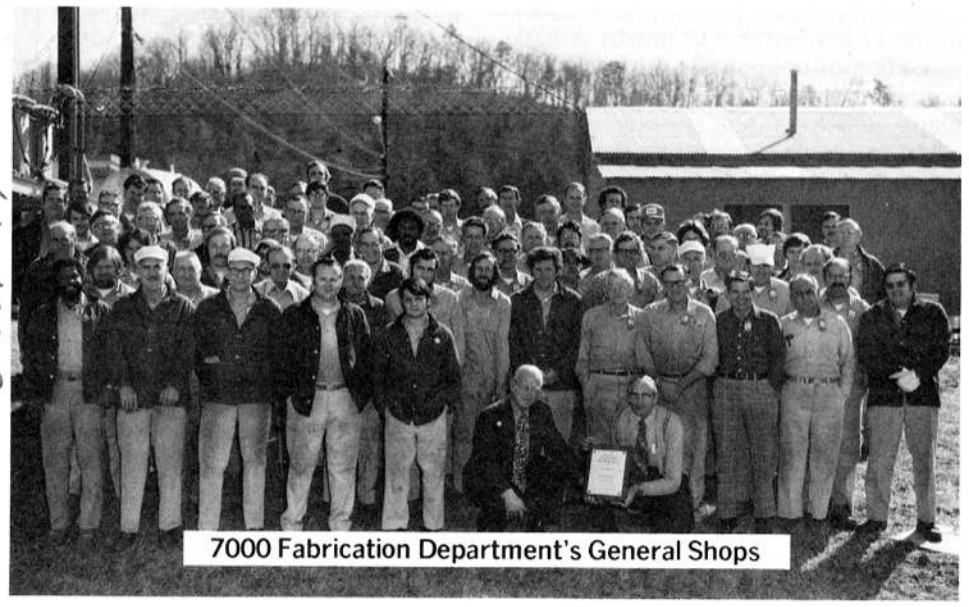
The three groups receiving "good" SSWA's were: General Shops, the 7000 Fabrication Department's Shops; West Research Services Department; and half of the Field, Transportation and Support Services Department known as the Grounds, Roads, Streets, Manpower Pool, Trash and Salvage Group.

Each of the ten P&E groups has won the Safe Worker Award at least one time during the program's four-year history. General Shops and South Research Services are first-time winners; while the other two honorees have won for the second time. A total of five groups have been so honored twice.

Harry H. Seagren, division director, awarded plaques to each of the four groups for their performance. (See pictures.)

0893-77

West Research Services Department


0889-77

7000 Fabrication Department's General Shops

division deaths

Alvin C. King, an electrician in Fabrication and Maintenance at ORGDP, died March 23 in the Oak Ridge Hospital. He joined Union Carbide in 1946.

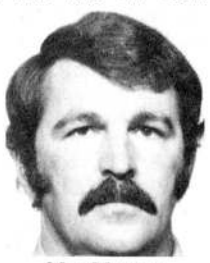

Mr. King

Survivors include his wife, Edith King, 4920 Palmwood Drive, Knoxville; a son, Harold King; daughters, Mrs. William Mellon, Mrs. Earnest Hickman; brothers, Henry and Link King; sisters, Ethel Breeding, Janie Summers, August Romines; and seven grandchildren.

Services were held at the Northwest Baptist Church, with interment in Lynnhurst Cemetery.

Vernon K. Myers, Computer Sciences Division at ORGDP, died March 15 in a Knoxville hospital.

A native of Winchester, Mr. Myers had spent most of his life in Oak Ridge. He attended East Tennessee State University and Massey Business College, and was a veteran of the U.S. Army.


Mr. Myers

He lived at 122 West Maiden Lane, Oak Ridge.

Survivors include his sons, Kelly and Danny Myers; his mother, Mrs. Vernon Myers; and a sister, Laurie Gibbs.

Funeral services were held at the Martin Funeral Home with burial in the Oak Ridge Memorial Park.

The family has requested that any memorials be in the form of gifts to the First Baptist Church building fund.

George H. Job, engineering specialist at ORNL, died March 13, at his home, 204 Virginia Road, Oak Ridge.

Before coming to the Laboratory, Job worked 27 years as an engineer in the following divisions: Laboratory (now Technical Services), Maintenance and Engineering. At the time of his transfer to ORNL, he was a developmental supervisor in the Gaseous Diffusion Division.

A native of Ohio, he joined Union Carbide in 1946 after serving four years in the U.S. Army, including two years with the Manhattan project.


Mr. Job

Survivors include his wife, Patricia Fogg Job; five sons, David F.; George W.; John H.; Thomas W.; and James M.; two daughters, Judith A. Strasser and Jodie L.; his father, George A. Job; two sisters, Norma Leer and Lenora Jones; and four grandchildren.

The family asks that any memorials be in the form of gifts to the Job Scholarship fund, in care of H.B. Shnider, 105 Ogden Circle, Oak Ridge.

Funeral services were held at First United Methodist Church with burial in Anderson Memorial Gardens.

UNION CARBIDE
UNION CARBIDE CORPORATION
NUCLEAR DIVISION
P. O. BOX Y, OAK RIDGE, TENNESSEE 37830

ADDRESS CORRECTION REQUESTED

BULK RATE
U.S. Postage
PAID
Union Carbide Corporation